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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,644	01/24/2006	Akira Hommi	12699/31	2315
23838	7590	09/12/2007		
KENYON & KENYON LLP 1500 K STREET N.W. SUITE 700 WASHINGTON, DC 20005			EXAMINER PHAN, HAU VAN	
			ART UNIT 3618	PAPER NUMBER
			MAIL DATE 09/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/565,644

Applicant(s)

HOMMI, AKIRA

Examiner

Hau V. Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-21 is/are rejected.
- 7) ☒ Claim(s) 5-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/24/06; 6/6/07</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 1/24/2006 and 6/6/2007 have been considered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-4, 8-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosseini et al. (5,535,124) in view of May (5,213,177).**

Hosseini et al. in figures 1-7, disclose an apparatus for controlling wheel slip equipped with a power output device that is capable of outputting a driving force to a drive shaft (110) linked to left and right wheels (101, 103). The apparatus comprising a mechanical braking device that is capable of outputting a mechanical braking force to each of the left and right wheels; a slip detection module (145) that detects a slip on

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each of the left and right wheels caused by wheel spin. Hosseini et al. also disclose a controller (160) that, in response to detection of a slip caused by spin of one of the left and right wheels by the slip detection module. The controller controlled the mechanical braking device to output a mechanical braking force to the spinning one of the left and right wheels. Hosseini et al. fail to show the controller controlling the power output device to restrict the driving force output to the drive shaft.

May in figures 1-4, teaches a traction control system comprising a slip detection module or slip sensor, an engine and a controller (52) for reduce the output power of the engine in response to wheel slip. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hosseini et al. with the traction control system having a controller as taught by May in order to reduce the output power of the engine in response to wheel slip.

Regarding claim 2, Hosseini et al. disclose the controller actuating and controlling the mechanical braking device to output a braking force to the spinning one of the left and right wheels, so as to distribute the driving force output from the power output device to the drive shaft practically equally into the left and right wheels.

Regarding claim 3, Hosseini et al. disclose a road surface gradient measurement estimation module that either measures or estimates a road surface gradient, wherein the controller actuates and controls the mechanical braking device, in response to detection of at least a converging tendency with regard to the spin of one of the left and right wheels, to output the braking force to the spinning one of the left and right wheels, based on the measured or estimated road surface gradient.

Regarding claim 4, Hosseini et al. disclose the road surface gradient measurement estimation module estimating a balancing force, which balances with a force applied to the vehicle in a direction along a road surface based on an acceleration of the vehicle and the driving force output from the power output device, as the road surface gradient, and the controller calculates a supplementary braking force corresponding to an insufficiency of the driving force output from the power output device to the drive shaft relative to the estimated balancing force, and actuates and controls the mechanical braking device to output a total braking force including the calculated supplementary braking force to the spinning one of the left and right wheels.

Regarding claim 8, Hosseini et al. disclose controller actuating and controlling the mechanical braking device to output the mechanical braking force to the spinning one of the left and right wheels, subject to fulfillment of a predetermined execution condition.

Regarding claim 9, Hosseini et al. disclose at least one of a gearshift position in a forward drivable range, an accelerator-on state, a driving force demand of not less than a preset level required to the drive shaft, and a brake-off state.

Regarding claim 10, Hosseini et al. disclose controller terminating the output of the braking force to the spinning one of the left and right wheels, when the predetermined execution condition fails to be fulfilled in the course of the output of the braking force to the spinning one of the left and right wheels.

Regarding claim 11, Hosseini et al. disclose a vehicle speed sensor that measures a vehicle speed, wherein the controller terminates the output of the braking force to the spinning one of the left and right wheels, when the measured vehicle speed

exceeds a threshold value in the course of the output of the braking force to the spinning one of the left and right wheels.

Regarding claim 12, Hosseini et al. disclose a road surface gradient measurement estimation module that either measures or estimates a road surface gradient, wherein the threshold value is set according to the measured or estimated road surface gradient.

Regarding claim 13, Hosseini et al. disclose the threshold value is set to decrease with an increase in road surface gradient as an ascending slope.

Regarding claim 14, Hosseini et al. disclose the controller terminating the output of the braking force to the spinning one of the left and right wheels, in response to detection of a slip caused by spin of the other wheel of the left and right wheels by the slip detection module in the course of the output of the braking force to the spinning one of the left and right wheels.

Regarding claim 15, Hosseini et al. disclose a temperature rise detection estimation module that either detects or estimates a predetermined temperature rise in said mechanical braking device, wherein the controller terminates the output of the braking force to the spinning one of the left and right wheels, in response to either detection or estimation of the predetermined temperature rise in the mechanical braking device in the course of the output of the braking force to the spinning one of the left and right wheels.

Regarding claim 16, Hosseini et al. disclose the temperature rise detection estimation module estimates the predetermined temperature rise in the mechanical

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braking device, when the output of the braking force to the spinning one of the left and right wheels continues for a predetermined first time.

Regarding claim 17, Hosseini et al. disclose the controller prohibits output of a braking force in response to spin of one of the left and right wheels over a predetermined second time, after the termination of the output of the braking force.

Regarding claim 18, Hosseini et al. disclose a lock detection module that detects a lock of each of the left and right wheels, wherein the controller terminates the output of the braking force to the spinning one of the left and right wheels, in response to detection of a lock of the spinning one of the left and right wheels by the lock detection module in the course of the output of the braking force to the spinning one of the left and right wheels.

Regarding claim 19, Hosseini et al. disclose a revolution speed measurement sensor that respectively measures revolution speeds of the left and right wheels; and a rudder angle measurement estimation module that either measures or estimates a rudder angle, wherein the slip detection module detects a slip on each of the left and right wheels, based on the measured revolution speeds of the left and right wheels and the measured or estimated rudder angle.

Regarding claim 20, May discloses slip detection module detects a slip caused by spin of a drive wheel, based on at least one of an angular acceleration of the drive shaft and a difference between revolution speeds of drive wheels as the left and right wheels linked with the drive shaft and revolution speeds of driven wheels with no output of driving force, and the controller drives and

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controls the power output device to restrict the driving force output to the drive shaft, in response to detection of a slip caused by the spin of the drive wheel.

Allowable Subject Matter

5. Claims 5-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reuter et al. disclose an electronic shift; Imaseki et al disclose a steering control; Earleson et al. disclose a vehicle brake control; Fujii et al. disclose an anti braking control.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hau V. Phan whose telephone number is 571-272-6696. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Ellis can be reached on 571-272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Hau V Phan
Primary Examiner
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9/9/07